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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/788,437	02/21/2001	Albert M. Leung	S168 0114 GNM/sks	5239
720	7590	11/20/2003	EXAMINER	
OYEN, WIGGS, GREEN & MUTALA 480 - THE STATION 601 WEST CORDOVA STREET VANCOUVER, BC V6B 1G1 CANADA			FERGUSON, MARISSA L	
			ART UNIT	PAPER NUMBER
			2854	
DATE MAILED: 11/20/2003				

Please find below and/or attached an Office communication concerning this application or proceeding.

CA

Office Action Summary

Application No.

09/788,437

Applicant(s)

LEUNG, ALBERT M.

Examiner

Marissa L Ferguson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 and 30-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12, 16-21, 30-36 and 38-43 is/are rejected.
- 7) ☒ Claim(s) 13-15 and 37 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 does not clearly address what the "means for monitoring" is connected to and is not clear as to whether the substrate is being claimed.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1,2,10,12,16-19,21,30,31,36 and 38-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chou et al ("Fabrication and Study of Shallow Gap Pirani Vacuum Sensor with a Linearly Measurable Atmospheric Pressure Range") in view of Sparks et al. (US Patent 5,706,565).

Regarding claims 1,19,30 and 40 Chou et al. teaches a means for heating a member and a means for monitoring a temperature of a member connected to control an output signal to indicate a pressure of a gas to which a pressure sensor is exposed (Pages 383-388 and 391). However, he does not explicitly disclose a member adherent

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by bonding to a surface of a substrate. Sparks et al. teaches wafer-to-wafer bonding (Column 2, Lines 22-35 and Column 5, Lines 22-26) which is a conventional process used to ensure a strong mounting connection.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention as taught by Chou et al. to include the bonding techniques as taught by Sparks et al., since Sparks et al. provides a stable and durable sealed connection of the device.

Regarding claims 2,17,18,21, 31,39 and 41, Chou et al. teaches a surface of a member in contact with a substrate and a surface of a substrate in contact with a member, he does not explicitly disclose a degree of roughness that comprises valleys and plateaus. Surface roughness is an inherent feature, since every type of surface has some degree of roughness.

Regarding claim 10, Chou et al. teaches a member that has length in the range of 50 to 250 μ m and a width of 1 to 10 μ m (Page 387, Part 3).

Regarding claims 12,16,36,38,42 and 43 Chou et al. teaches an electrically insulating layer (Page 387, Section 3) on a surface of a member, a member comprising polysilicon and an electrically insulating layer comprising a layer of silicon oxide (Figure 4), and comprising an electrically insulating layer/barrier on a surface of a substrate (Figure 4).

2. Claims 3-9,11 and 32-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chou et al. ("Fabrication and Study of a Shallow Gap Pirani Vacuum Sensor with a Linearly Measurable Atmospheric Pressure Range") in view of Sparks et

al. (US Patent 5,706,565) as applied to claims 1,9 and 30 above, further in view of Schieferdecker et al. (US Patent 5,597,957).

Regarding claims 3, 4 and 32 Chou et al. and Sparks et al. both teach the invention except a means for heating a member comprising an electrically conductive pathway that that has a temperature dependent resistance and a source of electrical current. Schieferdecker et al. teaches a means for heating a member comprising an electrically conductive channels that that has temperature dependent resistance and a source of electrical current (Abstract, Column 3, Lines 48 and 63 and Column 5) that ensures proper heating.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to further modify the invention as taught by Chou et al. to include the channels as taught by Schieferdecker et al., since Schieferdecker et al. provides and assures proper compensation of temperature fluctuations of a member.

Regarding claims 5-7, Chou et al. teaches an electrically insulating layer (Page 387, Section 3) on a surface of a member, a member comprising polysilicon and an electrically insulating layer comprising a layer of silicon oxide (Figure 4), and comprising an electrically insulating layer/barrier on a surface of a substrate (Figure 4).

Regarding claims 8,9,11 and 33-35, Chou et al. and Sparks et al. both teach the invention except a bridge extending between cantilever members, cantilever members attached to a substrate by pads and a bridge having a central collapsed portion. Shieferdecker et al. teaches a bridge-like structure extending between cantilever web-

like members (42,44), cantilever web-like members attached to a substrate by pads (Figure 2c) and a bridge having a central collapsed portion (Column 5, Lines 5-24).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to further modify the invention as taught by Chou et al. to include the bridge configuration as taught by Schieferdecker et al., since Schieferdecker et al. provides and assures proper compensation of temperature fluctuations of a member.

3. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chou et al. ("Fabrication and Study of a Shallow Gap Pirani Vacuum Sensor with a Linearly Measurable Atmospheric Pressure Range") in view of Sparks et al. as applied to claim 1 above, and further in view of Saul et al. (US Patent 6,290,388).

Chou et al. and Sparks et al. together teach the invention claimed except the temperature sensor having p-n junctions. Saul et al. teaches a temperature sensor that provides a p-n junction. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to further modify the invention as taught by Chou et al. to include a p-n junction as taught by Saul et al., since Saul et al. provides a region for making and transferring electrical contact between a diode and a heater.

Allowable Subject Matter

4. Claims 13-15 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

The following is a statement of reasons for the indication of allowable subject matter: with regards to claim 13, the prior art does not teach or render obvious a composite pressure sensor comprising a means for monitoring a temperature of a member of a second member of a second pressure sensor connected between the second input point and the second output point, the first resistor connected between the first input point and the second output point and the second resistor connected between the second input point and the first output point.

5 . Claim 37 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: with regards to claim 37, the prior art does not teach or render obvious a composite pressure sensor comprising a temperature sensor of a first pressure sensor connected between the first input point and the first output point, the temperature sensor of the second input point and the second output point, the first resistor connected between the first input point and the second output point and the second resistor connected between the second input point and the first output point.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marissa L Ferguson whose telephone number is (703)

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305-3194. The examiner can normally be reached on (M-T) 6:30am-4:00pm and every other (F) 7:30am-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Hirshfeld can be reached on (703) 305-6619. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

Marissa L Ferguson
Examiner
Art Unit 2854

Hoff


ANDREW H. HIRSHFELD
SUPERVISORY PATENT EXAMINER
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